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Supplemental Appendix:

Sonoma County's Leadership, Plans, Programs, and Partners for Forest Conservation, Climate Adaptation, and Mitigation

A History of Sonoma County's Climate Change Leadership

For over ten years, Sonoma County's community leaders and forward-thinking elected officials in each city and county government have worked together to establish strong action on climate change. The following history is excerpted from the March 2016 draft of the Regional Climate Protection Authority's Climate Action Plan:¹

- **1990:** Voters approved a sales tax measure to create the Sonoma County Agricultural Preservation and Open Space District (SCAPOSD) to preserve agricultural and open space lands throughout the county. Voters overwhelmingly reauthorized the sales tax measure in 2006.
- **2001:** All Sonoma County communities committed to the International Council for Local Environmental Initiatives campaign called Cities for Climate Protection, an international initiative to reduce GHG emissions through local government action.
- **2005:** The elected leadership in all Sonoma County communities adopted a countywide GHG emissions reduction target of 25% below 1990 levels by 2015. The City of Cotati adopted an even more aggressive goal of 30% below 1990 levels by 2015.
- **2008:** A local community non-profit group, the Climate Protection Campaign (now known as the Center for Climate Protection), developed a Community Climate Action Plan, which was the first community-wide examination of strategies to reduce community-wide GHG emissions.
- **2008:** Voters in Sonoma (and Marin) County approved a local sales tax measure to fund development of passenger rail service, Sonoma-Marin Area Rail Transit (SMART).

¹ Regional Climate Protection Authority. 2016. Climate Action 2020 and Beyond. Accessed online 1 April 2016. http://rcpa.ca.gov/wp-content/uploads/2016/03/CA2020-Public-Review-Draft-Plan_3-4-16.pdf

- **2009:** Sonoma County jurisdictions established the Regional Climate Protection Authority (RCPA), a multi-jurisdictional agency tasked with coordinating countywide efforts to reduce GHG emissions and increase climate change resilience. RCPA member jurisdictions and their partners have created and successfully pioneered innovative approaches to climate solutions including Property Assessed Clean Energy (PACE) financing, Pay As You Save (PAYS) on-bill repayment for resource efficiency, community choice aggregation, carbon-free water, electric vehicle infrastructure deployment, climate action through conservation, adaptation planning, and more.
- **2009:** A coalition of natural resource managers, policy makers, and scientists formed the North Bay Climate Adaptation Initiative to create positive solutions to the problem of climate adaptation for the ecosystems and watersheds of the North Bay, with Sonoma County as the pilot. NBCAI has become RCPA's partner in climate resilience planning, producing Sonoma County's first climate vulnerability assessment.²
- **2011:** Sonoma County Water Agency adopts its Energy Policy, which commits the Water Agency to achieving:
 - Carbon Free Water - Recognizing the threat to economic security and public safety posed by climate change, the Agency continues to implement programs that reduce the Agency's greenhouse gas production and achieved a net carbon neutral energy supply by 2015.
 - Projects of Regional Benefit - The Agency continues to seek and develop more reliable sources of electricity for the region, including participating in local energy projects and programs that promote self-sufficiency and make North Bay residents less dependent on outside energy sources subject to market fluctuations, natural disasters, and transmission system failures.
- **2012:** The City of Santa Rosa was the first local government in the county to adopt its own Climate Action Plan and a new GHG emissions target of 25% below 1990 levels by 2020.

Community leadership has resulted in direct actions by the citizens, businesses, and communities in Sonoma County to reduce GHG emissions. For example:

- All communities in the county (except Healdsburg, which has its own electric utility) now participate in the local Community Choice Aggregation program, Sonoma Clean Power (SCP), which cost effectively provides electricity with a higher renewable energy content than otherwise available from the private utility already provided electricity with a large renewable portfolio for many years.
- The County established a PACE program known as the Sonoma County Energy Independence Program to help property owners finance energy and water efficiency improvements. This program has reduced GHG emissions equal to taking 3,000 cars off the road and generated enough clean energy to power nearly 6,000 homes for a year.

² Cornwall, C., S. Moore, D. DiPietro, S. Veloz, L. Micheli, L. Casey, M. Mersich. 2014. Climate Ready Sonoma County: Climate Hazards and Vulnerabilities. Prepared as part of Climate Action 2020 by North Bay Climate Adaptation Initiative for Sonoma County Regional Climate Protection Authority. Santa Rosa, California, USA. rcpa.ca.gov/data-and-reports/climate-risks/

- RCPA and jurisdictions county-wide support energy-efficiency efforts and solar retrofits through a variety of programs. Waste minimization, recycling, and composting programs are already an essential part of resource conservation in the county. The Sonoma County Water Agency is a leader in innovating low-carbon methods for delivering water supplies and conserving water. The Agency reached its goal of a carbon-free water delivery system in 2015, and is also a prominent supporter of energy and water conservation financing.
- By 2010, Sonoma County communities had reduced countywide GHG emissions to approximately 7% below 1990 levels, even while the county's population grew by 25% and employment grew by 17% between 1990 and 2010. On a per capita basis, county GHG emissions declined approximately 26% over the same period.

Sonoma County's Planning Efforts for Climate Change and Forest Health

The following are a few examples of Sonoma County's planning and data collection efforts for climate change mitigation, adaptation, and forest health:

- **Sonoma County Community Wildfire Protection Plan (Draft):** This draft 2016 plan was developed by Fire Safe Sonoma in collaboration with stakeholders from federal, state, and local agencies and community groups. It presents strategies to address WUI wildfire issues in rural, forested residential communities.³
- **Climate Action 2020:** This 2016 plan by the Regional Climate Protection Authority outlines specific actions to reduce greenhouse gas emissions and adapt to a changing climate in Sonoma County. It includes an inventory of emissions as well as total carbon stock in different sectors, cities, and land use types in Sonoma County, including our forests. It focuses attention on the greatest opportunities and key strategies for emissions reductions.⁴
- **The Climate Action through Conservation Project:** This 2015 planning tool developed by The Nature Conservancy and Sonoma County Agricultural Preservation and Open Space District helps jurisdictions estimate the greenhouse gas reductions that may be achieved through management, restoration, and conservation activities on a landscape scale. The project provides detailed information on the metric tons of carbon dioxide equivalent sequestered in Sonoma County's forests and urban forests.⁵
- **Sonoma County Community Climate Action Plan:** This 2008 plan by the Climate Protection Campaign presents solutions to meet Sonoma County's goal to reduce greenhouse gas

³ Fire Safe Sonoma. 2016. Sonoma County Community Wildfire Protection Plan. Accessed online 1 April 2016. <http://www.firesafesonoma.org/main/docs>

⁴ Regional Climate Protection Authority. 2016. Climate Action 2020 and Beyond. Accessed online 1 April 2016. http://rcpa.ca.gov/wp-content/uploads/2016/03/CA2020-Public-Review-Draft-Plan_3-4-16.pdf

⁵ The Nature Conservancy and Sonoma County Agricultural Preservation and Open Space District. 2015. Conserving landscapes, protecting the climate: The climate action through conservation project. San Francisco and Santa Rosa, CA. Accessed online 1 April 2016. http://scienceforconservation.org/dl/CATC_Final_Jan2016.pdf

reductions emissions by 25% below 1990 levels by 2015.⁶ The solutions are organized into four sectors, including agriculture and forests. Sonoma County and all nine cities have adopted the plan.

- **Climate Ready North Bay:** To create a framework for adapting to climate change, decision-makers working in Northern California's watersheds are working to define climate vulnerabilities in the context of site-specific opportunities and constraints relative to water supply, land use suitability, wildfire risks, ecosystem services, biodiversity, and quality of life. Working in partnership with the Sonoma County Regional Climate Protection Authority (RCPA) and the North Bay Climate Adaptation Initiative (NBCAI), Pepperwood's Terrestrial Biodiversity Climate Change Collaborative (TBC3.org) developed customized climate vulnerability assessments with select natural resource agencies of California's Sonoma, Marin, Napa and Mendocino counties via "Climate Ready North Bay," a public-private partnership funded by the California Coastal Conservancy's Climate Ready program.
- **Sonoma County Sudden Oak Death Strategic Response Plan:** This 2008 plan by the University of California Cooperative Extension and other Sonoma County agencies presents goals and strategies to manage oak woodlands and hardwood forests impacted by Sudden Oak Death.⁷
- **Connecting Communities and the Land – A Long-Range Acquisition Plan:** This 2006 land acquisitions plan by the Sonoma County Agricultural Preservation and Open Space District (SCAPOS) recognizes the value of our intact working forest landscape. In implementing this plan, SCAPOS has partnered with local, state, and federal partners (including Forest Legacy) on numerous forest land conservation projects, including the 5,630-acre Jenner Headlands, 19,000-acre Buckeye Forest (formerly Preservation Ranch), the 688-acre Richardson Trust/Kashia Pomo Project, as well as several other projects encompassing over 3,500 acres.⁸
- **Sonoma County Vegetation Mapping and LiDAR Program:** This joint program, led by SCAPOS and the Sonoma County Water Agency, provides an inventory of the county's landscape features, ecological communities, and habitats. These data sets are intended to facilitate conservation planning, watershed management, and climate change mitigation and adaptation efforts in Sonoma County.
- **Urban Water Management Plan:** This 2010 Plan projects water supplies and water demands over the next 25 years and describes water supply reliability and climate change impacts to both groundwater and surface water supplies. The plan also describes water conservation activities and integrated implementation of strategies to actively manage the health of the water supply watersheds. This Plan is currently being updated this year which will include hydrologic

⁶ Climate Protection Campaign. 2008. Sonoma County Community Climate Action Plan. http://coolplan.org/ccap-report/CCAP_Final_11-05-08.pdf

⁷ University of California Cooperative Extension, Sonoma County, Sonoma County Department of Emergency Services. 2008. Sonoma County Sudden Oak Death Strategic Response Plan. http://www.firesafesonoma.org/main/sites/default/files/sodsr_plan.pdf

⁸ Sonoma County Agricultural Preservation and Open Space District. 2006. Connecting communities and the land: A long-range acquisition plan. <http://www.sonomaopenspace.org/wp-content/uploads/2014/09/District-Acquisition-Plan-2006.pdf>

modeling addressing future climate scenarios and large scale landscape conservation programs and incentives.

Other Ongoing Forest Management Activities

With appreciation for funding provided by CalFire, California Department of Fish and Wildlife and USDA's Natural Resources Conservation Service, the following forest management and conservation projects are in process, or being actively discussed:

- **CalFire:** In FY14 CalFire allocated a total of \$99,012 for CFIP plans for 22 landowners in Sonoma County. So far in FY15, an additional \$95,276 has been allocated for 18 management plans, and \$22,782 for 2 fuels reduction projects. CalFire is working with local partners to implement these grants – see below.
- **FireSafe Council:** Recently completed the draft Sonoma County Community Wildfire Protection Plan.
- **Coast Ridge Community Forest:** Created in 2009, more than 50 private and public landowners are working jointly to plan and implement coordinated forest management across property boundaries within this region. In partnership with Cal Fire, CFIP grants were awarded to thirteen private landowners in 2015. High priorities among management activities are fuel load reduction and water conservation. An NRCS EQIP grant is funding a cooperative grazing program to reduce fuel load and improve soil health on multiple properties in the Gualala Ranch subdivision. In partnership with the Gualala River Watershed Council, a rainwater catchment grant is funding the Flow Bank program to increase stream flow in the Gualala River Watershed, as described below.
- **Gualala River Watershed Council:** The Gualala River, at 212,563 acres (332 mi²) is the largest watershed in the Mendocino Coast Hydrological Unit. Two-thirds of the watershed is within Sonoma County. The GRWC is already assisting 17 landowners in the Forest Management Plan process and have approximately 15 more landowners on a wait list for future funding encompassing over 15,000 acres. The GRWC implements restoration and monitoring within the watershed at the programmatic scale, developing projects that integrate infrastructure upgrades, restoration, monitoring and public education to increase effectiveness and lower costs. Through this cohesive strategy and landowner support, the GRWC has upgraded 263 miles (18% of the watershed) of timber and ranch roads, installed over 800 large wood structures helping to restore 15 creeks, and conducted scientific monitoring of the watershed for the past 16 years.

GRWC also works to increase off-creek water storage, and is currently installing fifty-five (55) 5,000-gallon tanks and seven (7) 55,000-gallon tanks for residential and agricultural landowners. The organization has been funded to upgrade the North Gualala off-stream pumping site, saving one million gallons of water per year from being pumped from the North Fork Gualala River.

- **Sonoma Land Trust and The Wildlands Conservancy:** Several of Sonoma Land Trust's properties are managed for forest health. The Jenner Headlands preserve, managed in partnership with

The Wildlands Conservancy, features shaded fuel breaks and a recently approved timber harvest plan, which is scheduled for implementation in summer 2016. The Little Black Mountain preserve also features a shaded fuel break, timber stand improvements, and other fuel load reduction management efforts. Management of this preserve has been supported by CalFire's CFIP program, Conservation Corps North Bay, and Fire Safe Sonoma. Finally, the Pole Mountain Preserve protects the forested landscape and ensures the continued operation of the Fire Lookout, the last remaining lookout in operation in the North Bay.

- **Sonoma County Water Agency, CalFire, and the U.S. Army Corps of Engineers:**

The Russian River is the primary source of water for 600,000 people in Sonoma and Marin counties. Lake Sonoma collects runoff from a drainage area of approximately 130 square miles and stores water during the rainy season (November through April) for releases into the Russian River during the dry season (May through October). Large collector wells on riverbanks near the town of Forestville pump water through about 100 feet of sand and gravel. This naturally filtered water needs only a slight pH adjustment and the state-required addition of chlorine before it is pumped directly to customers.

The Sonoma County Water Agency, which controls releases from the lake for water supply purposes, is concerned that a major fire in the heavily forested watershed could result in increased sediment to the lake. This could temporarily reduce water quality and could possibly have long-term impacts on the sands and gravels that naturally filter the water supply. The Water Agency is working with USACE, Cal-Fire, and local partners on plans to more actively manage the Lake Sonoma watershed to reduce the risks of a catastrophic fire and to maintain forest health.

- **Sonoma County Water Agency, Sonoma Ecology Center, Sonoma Clean Power:**

- In partnership with USDA Natural Resources Conservation Service, the Sonoma County Water Agency funded a biochar demonstration project which featured local production of biochar from a retort unit producing 500 lbs of high quality char per batch. Project utilized local waste wood from tree service, recycling carbon into char which was then mixed with compost for soil amendment. Scientists tested biochar's effectiveness for water conservation, plant yield and soil health on farms in various soil types with conclusive water saving results. The Sonoma County Biochar Project, led by Sonoma Ecology Center includes the following partners: Gold Ridge Resource Conservation District, North Coast Resource Conservation & Development Council, New England Biochar and Banchero Tree Service.
- In partnership with Sonoma Clean Power, the Water Agency is currently studying the feasibility of a forest fuel reduction pilot project featuring a mobile power generation unit serving to convert woody biomass to electric power to offset local energy needs and to make char.
- Plans are underway to engage the Summer Youth Ecology Crews and Water Agency's Stream Maintenance Program crews in forest thinning and trail building activities reducing fire risk and training youth crews in skills for future forest management work.

- **Regional and/or County-wide PTEIR:** Numerous discussions are occurring about how best to plan for the fuel breaks, fuel reductions and other forest management needs throughout the county.
- **2017 North Coast Forest Conservation Conference:** The first North Coast Forest Conservation Conference occurred in 2012 at Santa Rosa Junior College's Shone Farm. The conference was wildly successful, and planning has begun for the next conference in June of 2017. The theme of the conference is "Growing Resilience in our Forests and Woodlands."